

Composite Indicators for Contraceptive Logistics Management

The EVALUATION Project with
The Family Planning Logistics Management project
(John Snow, Inc. and the Centers for Disease Control and Prevention)

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FPLM

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Abstract

This document presents an evaluation tool for logistics systems. It contains a series of composite indicators for measuring the components and functions of a logistics system. These indicators, divided into two categories, help the user assess a logistics system's overall performance and sustainability. Performance indicators measure how well the system executes tasks and sustainability indicators measure the degree to which the system functions without external assistance.

Summary worksheets, forms, and descriptions of indicators follow the background and scoring information.



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Guidelines for Scoring the Composite Indicators for Commodities and Logistics

Background and Intended Use

The Commodities and Logistics Working Group, organized under The EVALUATION Project, has developed two types of indicators for evaluating the performance of logistics systems. The first type consists of individual indicators, which can be meaningfully measured. The second involves composite indexes, which encompass all key dimensions of a logistics system, including both quantitative and qualitative elements. The two types of indicators are designed to be complementary. The composite measures were developed because the individual indicators alone do not provide a complete picture of the logistics system. The composite indicators are intended to evaluate the overall performance of a logistics system.

There are two composite indicators: the Performance Indicator and the Sustainability Indicator. One measures the performance of the logistics system while the other measures the degree to which the system functions independently of outside assistance. These two indicators contain the same items, but scored in relation to these two different purposes.

Although the composite indicators could be applied to various logistics systems and at various levels of the system, their primary application is intended to be at the national level for a particular logistics system. Therefore, when completing the scoring form, please note which system and at which level you conduct your evaluation, e.g., national MOH system, regional IPPF system, social marketing system for oral contraceptives and condoms, and so forth.

These indicators will be used primarily to evaluate performance of logistics systems at different points in time to show how program efforts are being translated into improved systems. It is not intended to serve as a detailed diagnostic tool.

Scoring Guidelines

These scoring guidelines are intended for logistics advisors who are well acquainted with the operation of logistics systems. Proper use of these indicators requires a number of judgments, such as whether procedures are “proper” or facilities “adequate.” Only people who understand logistics procedures and guidelines extremely well should make these judgements.

Composite Indicators

Both composite indicators are composed of 23 individual items grouped into 8 elements. The Performance Indicator addresses the question “How well is the logistics system functioning?”

Each item should be scored on either a five-point (0 to 4) or three-point (0 to 2) scale, as marked on the scoring form. A score of zero indicates the complete lack of the characteristic or function. A top score of four or two indicates that all the characteristics are present and the function is performed well at all levels of the system. If a function is not performed by a particular system being scored, it should receive a score of zero.

The Sustainability Indicator addresses the question “How independent from donor support is the system?” All elements are scored on the same 0-4 or 0-2 point scale. In this case, however, top scores are reserved for functions that are executed without any outside assistance. Zero scores indicate that the function depends entirely on outside assistance. The degree of outside assistance is the only criteria for assigning the score. Thus, if a particular system does a poor job of forecasting, but receives no outside help, it should receive a 4 on the Sustainability Indicator, even though it will receive a 0 on the Performance Indicator.

It is important for the scorer to record his or her rationale for each score as well as any important notes or caveats pertaining to the score in the Comments section. Without these comments, it will be difficult to assess any changes, especially when two different scorers are involved.

Some indicators contain several characteristics, such as adequacy of storage capacity and conditions, which include water leaks, security, stacking procedures, etc. Individual indicators were not developed for each aspect; instead, the evaluator must make an attempt to include all these factors in the score.

If scoring is conducted at the national level, scores should encompass judgments made about all levels of the system—national to service delivery point levels. Impressionistic judgments are acceptable but will be most useful if reasons are carefully annotated in the Comments section. Even if the scorer knows nothing about a particular item, he or she should make an educated guess, since a blank or zero score will be interpreted as a lack of that function or complete reliance on outside assistance.

Scoring should be done on an absolute, not a relative, basis. In other words, programs should be scored on the same basis regardless of the stage of development of their family planning program or the situation in the country.

Countries in which FPLM works have been assessed through the composite indicators (CIs) since September 1995 (the beginning of FPLM III) so that at least one “baseline” score is available. At the very least, each country’s systems will be duly re-assessed at the “mid-term” and “final” stages of the project so that some indication of progress can be made.

There are some inherent weaknesses in the scoring of the CI for different systems. First, the CI assessments are subjective—they are based on the extent of the scorer’s knowledge, and it is difficult for someone to rank each component of the system without in-depth knowledge of it. On the other hand, those who work closely with the system, particularly those who are in charge of the system, may have a biased view of it.

To ameliorate these problems, two measures may be taken. First, to generate a range of values, one should get as many people as possible to independently score the 8 elements and 23 sub-elements of the system. It is technically difficult to aggregate these scores, however, because they are ordinal data and therefore may not be averaged across scorers.

A second and better solution is to group scorers so that they can discuss the situation before scoring each item. The grouping has the effect of consensus--especially if the groups are equally matched and comprised of four or fewer people.

The CIs should be used as a learning mechanism, a group consolidation tool, and an exercise in obtaining descriptive data. Indeed, in the small group process, the various components of the management and logistics system are usually discussed thoroughly. From previous experience (in the Philippines and Morocco) and research (Stover et al.), a nominal group technique method for scoring the CIs is considered preferable.

Nominal Group Method for Scoring CIs

This process is a kind of “nominal group technique,” whereby first the smaller groups and then the larger group puts effort into, and then owns the results coming out of the process. In the process, group members discuss the broader issues and learn more about the contraceptive distribution and logistics management system in their country.

The following is a guideline:

1. Identify all the relevant personnel who know enough about the system to be able to assess it (maximum 15-20 - minimum 6).
2. Make arrangements for a one-day exercise (to take place in a hotel or conference room, preferably away from the scorers' workplace.)
3. Split the large group into smaller groups (groups of three work best) with as equal a knowledge base as possible in each of the groups.
4. The facilitator (FPLM advisor) should introduce the day in terms of what is to be achieved. Emphasizing what is required is an honest reflection of the system being assessed. Clarification of the CI and the scoring mechanisms should also be done at this time.
5. Each of the groups should discuss the first indicator (LMIS) for a set amount of time. Since the LMIS indicator has four sub-elements to separately score performance and sustainability, this first element will take time until each of the small groups has agreed upon a way of conducting discussion

within their separate groups. Thus, if 10 minutes are given for each of the sub-elements and 5 minutes override, then this first element could take 45 minutes.

6. When all the small groups have finalized their scores, the facilitator needs to collect the scores from each small group. This may then be followed by a joint group discussion on the scores where there are differences of opinion. The aim is to come up with a consensus score for Performance and Sustainability for each of the sub-elements in 15 minutes.

7. Repeat steps 5 and 6 for each of the elements in the Composite Indicators. Some of these with only one or two sub-elements such as Policy or Forecasting may take little time, whereas others like Distribution, which has five sub-elements, may take a lot longer. The following is an approximate time guide for each of the elements for a group of 12 divided into 4 small groups:

LMIS—60 minutes

Forecasting—30 minutes

Obtaining Supplies/Procurement—30 minutes

Warehousing & Storage—50 minutes

Distribution—60 minutes

Organization & Staffing—50 minutes

Policy—15 minutes

Adaptability—15 minutes

8. After completing all the scores and obtained a consensus for each sub-element, the resultant total overall scores may be compared to the baseline scores to see if there has been improvement or otherwise in a group discussion. This may take 20 more minutes.

As the above shows, the process outlined is not quick—it is necessarily an all-day affair which serves the purpose of obtaining the best consensus score from people involved in the management of logistics and commodities for a country. In addition, it serves as a forum for identifying the strengths and weaknesses of a system from which can be drawn lessons learned and strategies to address deficiencies in the system. In turn these can feed into the CSEP for a country for future activities.

Aggregating Scores

Once all items have been scored individually, WordPerfect automatically calculates the overall composite score for each indicator.

To enter individual item scores for each of the 8 elements beginning on p. 5, place the insertion point in the space above the potential scores [i.e., “(0-4)”] and enter the given score. Moving the insertion point out of the cell will prompt WordPerfect to automatically calculate the entire document—i.e. it will add the columns under the column heads (i.e., Performance or Sustainability) and will complete both worksheets.

Composite Indicators

Worksheet for Calculating the Performance Indicator

Element	(1) Actual Score	(2) Potential Score	(3) Fraction of Potential Col 1/Col 2	(4) Weight	(5) Calculated Score Col 3 x Col 4
1. LMIS	0	12	0.00	17	0.00
2. Forecasting	0	8	0.00	11	0.00
3. Procurement	0	8	0.00	17	0.00
4. Warehousing and Storage	0	12	0.00	17	0.00
5. Distribution	0	18	0.00	17	0.00
6. Organization and Staffing	0	14	0.00	11	0.00
7. Policy	0	4	0.00	5	0.00
8. Adaptability	0	4	0.00	5	0.00
TOTAL OVERALL SCORE					0.00

Worksheet for Calculating the Sustainability Indicator

Element	(1) Actual Score	(2) Potential Score	(3) Fraction of Potential Col 1/Col 2	(4) Weight	(5) Calculated Score Col 3 x Col 4
1. LMIS	0	12	0.00	17	0.00
2. Forecasting	0	8	0.00	11	0.00
3. Procurement	0	8	0.00	17	0.00
4. Warehousing and Storage	0	12	0.00	17	0.00
5. Distribution	0	18	0.00	17	0.00
6. Organization and Staffing	0	14	0.00	11	0.00
7. Policy	0	4	0.00	5	0.00
8. Adaptability	0	4	0.00	5	0.00
TOTAL OVERALL SCORE					0.00

The scores arrived at using this procedure will range from a high of 100 to a low of 0.

Evaluation Form

Name of Scorer:

Country:

Date:

(MM/DD/YYYY)

Name of Program Scored:

Type of Program (circle one):

Government / IPPF-Affil. / NGO /

Social Marketing / Private Commercial / Other

(please specify) _____ YES

NO

Replacement Scores:

Level Scored (circle one):

Whole System / Central Only /

Regional Only / District Only /

Local (SDP)

If Regional, District, or Local, please specify location and name _____

General Notes:

Categories To Be Scored

Performance	Sustainability	
0	0	1. Logistics Management Information System (LMIS)
(0-4)	(0-4)	<p>Program has basic elements of LMIS system.</p> <p>LMIS contains beginning inventory balance, supplies received, supplies issued, ending inventory balance, and system losses. LMIS system contains contraceptives component, keeps appropriate records throughout the system for contraceptives, and is documented in writing.</p> <p>Comments:</p>
(0-4)	(0-4)	<p>LMIS information is used in management decision making.</p> <p>Data are used for continuous monitoring of supply situation as well as periodic forecasting and ordering.</p> <p>Comments:</p>
(0-2)	(0-2)	<p>LMIS information is fed back to all lower levels in the distribution system.</p> <p>Summary data are periodically provided to regional and subregional distribution stations.</p> <p>Comments:</p>
(0-2)	(0-2)	<p>Commodities data are validated by cross-checking data with other data sources.</p> <p>Commodities data are periodically cross-checked against supplies received, service statistics, survey data, and field audit data.</p> <p>Comments:</p>

Performance	Sustainability	2. Forecasting
0	0	
(0-4)	(0-4)	<p>Periodic forecasts of consumption are prepared, updated, and validated.</p> <p>Forecasts of consumption are properly prepared for each program, method, and brand. Both short-term (e.g., annual) and longer-term (e.g., three year) forecasts are prepared in accordance with program needs of local budgeting and procurement cycles. Forecasts are prepared and updated using most recent and appropriate data. Forecasts take into account programmatic plans (i.e., expansion of service outlets, training, AIDS advertising, etc.). Forecasts are validated by comparing forecasted consumption with reported consumption for past years.</p> <p>Comments:</p>
(0-4)	(0-4)	<p>Forecasts are incorporated into cost analysis and budgetary planning.</p> <p>Costs and budgets include not only goods, but also warehousing and transport costs.</p> <p>Comments:</p>

Composite Indicators

Performance	Sustainability	
0	0	3. Obtaining Supplies/Procurement
(0-4)	(0-4)	<p>Consumption forecasts are used to determine short-term procurement plans.</p> <p>Procurement forecasts take into account inventory levels, coordination of suppliers/donors, shipment and handling schedules, and anticipated changes in program activity. Program actively monitors/manages coordination among suppliers/donors. Program addresses need to maintain continuity of brands (particularly hormonal formulations).</p> <p>Comments:</p>
(0-4)	(0-4)	<p>The correct amounts of contraceptives are obtained in appropriate time frame.</p> <p>Program knows and complies with procedures and time frames for ordering commodities from suppliers and donors, including trade, regulatory, and currency restrictions.</p> <p>Comments:</p>

Performance	Sustainability	
0	0	4. Warehousing and Storage
(0-4)	(0-4)	<p>Adequacy of storage capacity and conditions.</p> <p>Storage capacity is large enough for present needs and program has plans for meeting future needs (i.e., five years hence).</p> <p>Storage conditions meet acceptable standards for cleanliness, orderliness, arrangement and labeling of supplies to facilitate FEFO system, stacking of supplies, security, ventilation, light, water leaks, fire safety, insect precautions, and organization of information files. Program has written guidelines for contraceptive storage and handling.</p> <p>Comments:</p>
(0-2)	(0-2)	<p>Conducts at least one physical inventory of contraceptives per year at each warehouse.</p> <p>Comments:</p>
(0-2)	(0-2)	<p>Knows and complies with standards for maintaining product quality.</p> <p>Program has procedures for ensuring that products meet standards, goods are visually inspected, products can be sampled and tested for quality, and unfit and expired products are destroyed. Has procedure for capturing client complaints regarding product quality.</p> <p>Comments:</p>
(0-4)	(0-4)	<p>Issues stock according to first expiry/first out (FEFO) inventory control procedures.</p> <p>Comments:</p>

Composite Indicators

Performance	Sustainability	
0	0	5. Distribution
(0-4)	(0-4)	<p>Has appropriate distribution system and schedule for stocking each level.</p> <p>Procedures should specify what type of distribution system (i.e., min/ max, topping up, etc.) is being used. System should have a documented distribution schedule.</p> <p>Comments:</p>
(0-4)	(0-4)	<p>Each level is stocked adequately.</p> <p>Each level of the distribution system keeps inventories according to guidelines specified in plan.</p> <p>Comments:</p>
(0-4)	(0-4)	<p>Have experienced minimal stockouts during the previous year.</p> <p>Severity of stockouts is assessed by considering the relative importance of stocking out of the method/brand, the level or location of the stockouts, and the duration of stockouts.</p> <p>Comments:</p>
(0-2)	(0-2)	<p>Has a system for tracking and documenting system losses.</p> <p>Has a system for tracking losses and investigates unusual losses or large amounts of unaccounted for supplies.</p> <p>Comments:</p>
(0-4)	(0-4)	<p>Has adequate transportation system for moving supplies.</p> <p>Adequate transportation resources exist and are used effectively. Vehicles are adequately maintained.</p> <p>Comments:</p>

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Performance	Sustainability	
0	0	6. Organization and Staffing
(0-4)	(0-4)	<p>An appropriate logistics unit exists; the unit has adequate resources; and the Logistics Officer-in-Charge has adequate authority.</p> <p>The logistics unit is responsible for managing the contraceptive logistics system and has adequate resources to serve the national family planning program. The Logistics Officer-in-Charge is a dedicated position (i.e., shares no other responsibilities) and has adequate authority (i.e., is equivalent to other functional unit heads).</p> <p>Comments:</p>
(0-4)	(0-4)	<p>Effective supervision is maintained at all levels and written policies and procedures exist.</p> <p>Supervision occurs routinely. A written manual exists to ensure that the logistics system is institutionalized and would be able to survive a turnover of staff.</p> <p>Comments:</p>
(0-2)	(0-2)	<p>Has a logistics training plan and an adequate number of active personnel trained in logistics.</p> <p>Comments:</p>
(0-4)	(0-4)	<p>Has sufficient personnel performing appropriate logistics activities.</p> <p>Comments:</p>

Composite Indicators

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Performance	Sustainability	
0	0	7. Policy
(0-4)	(0-4)	<p>Logistics information is provided to appropriate policymakers.</p> <p>Logistics information is provided to appropriate inter- and extra-governmental decision makers (e.g., Ministry of Health, Ministry of Finance, UNFPA, and USAID) regarding program goals and logistics planning.</p> <p>Comments:</p>

Performance	Sustainability	
0	0	8. Adaptability
(0-4)	(0-4)	<p>Entire logistics system has ability to adapt successfully to changes.</p> <p>Logistics system is responsive and can adapt to changing situations. Capability exists to obtain necessary resources, either internally or externally, to supply growing demand.</p> <p>Comments:</p>